#### IN THE NAME AND BY THE AUTHORITY OF THE



UNITED STATES OF AMERICA	
State of Montana	

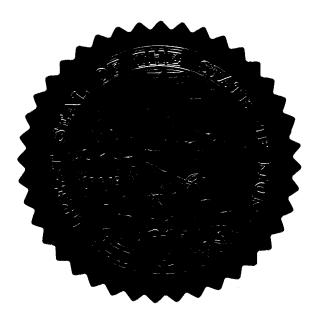
After full consideration of the matter, and pursuant to the authority vested in the Secretary of State, I Linda McCulloch, Montana Secretary of State, hereby approve for use in any election in the State of Montana

### ES&S Unity Suite, V. 3.4.1.0

I further certify that upon examination, held June 17, 2015, that said systems meet the requirements set forth in Title 13, Chapter 17, Montana Code Annotated, and the Administrative Rules of Montana 44.3.1701 through 44.3.1711.

#### A State certification is not:

- An endorsement of a manufacturer, voting system, or any of the system's components.
- A State warranty of the voting system or any of its components.
- A determination that a voting system, when fielded, will be operated in a manner that meets all HAVA requirements.



IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Great Seal of the State of Montana at Helena, Montana, this fourteenth day of July, 2015.

LINDA MCCULLOCH
Secretary of State



# MONTANA SECRETARY OF STATE Elections and Government Services

Voting System Examination Report of Findings ES&S Unity Version 3.4.1.0 – June 17, 2015

On June 17, 2015, the Office of the Montana Secretary of State conducted voting system examinations in Helena, Montana to review and test the latest upgrades to Election Systems & Software Unity from v. 3.4.0.0 to v. 3.4.1.0 pursuant to Montana Code Annotated 13-17-101.

The examination was conducted by the following State and County officials: Elections Specialist Alan Miller, Elections Specialist Casey Hayes, MT Votes Help Desk Specialist Casey Sjolund, Lewis & Clark County Election Administrator Paulette DeHart, Missoula County Chief Administrative Officer Vickie Zeier, Missoula County Election Administrator Rebecca Connors, Missoula County Computer Applications Support Specialist Janice Goldsby, Yellowstone County Election Administrator Bret Rutherford, Flathead County Deputy Election Administrator Monica Eisenzimer, Flathead County Election Administrator Debbie Pierson.

Presenting the voting systems were Election Systems and Software (ES&S) Quality Assurance Director Chris Bruscino, and State Certification Manager Tobey Dingbaum. Assisting were ES&S Customer Service Manager Jake Johnson, and Regional Sales Manager Lori Mommaerts.

#### **Voting Systems Examined**

Unity suite 3.4.1.0 includes two tabulators, the DS200 and the DS850. It also includes two Unity software updates, one for Election Reporting Manager and one for the Hardware Programming Manager. Unity is a suite of software products that integrates several components that are used throughout the ballot preparation and tabulation process. Election Reporting Manager (ERM) is a back-end Election Day software module that accumulates election results that formats and generates a customized election report on paper.

- Please refer to Appendix A, ES&S Application Documentation for a complete description of ES&S Unity 3.4.1.0 and components.
- Unity 3.4.1.0, with the listed components, is also certified in Alabama, Iowa, Idaho, Indiana, Kansas, Maine, Minnesota, Mississippi, North Carolina, North Dakota, Nebraska, New Jersey, Ohio, Oregon, South Dakota, Texas, Washington, West Virginia and Wyoming.

- Unity 3.4.1.0 was federally certified by the Election Assistance Commission on April 4, 2014 under EAC# ESSUNITY3410. Independent testing was completed on March 31, 2014 by National Technical Systems.
  - O A federal certification by the U.S. Election Assistance Commission is an official recognition that a voting system has been test to and has met an identified set of federal voting system standards.

#### **Required Materials**

Pursuant to Montana law, ES&S provided fully functional versions of the voting systems to be examined. Hardware supplied by the vendor for the testing included three DS200s, one DS850, and one laptop loaded with Election Reporting Manager.

ES&S gave a PowerPoint presentation on Unity 3.4.1.0 and the applicable updates.

Blank ballots, in the form required by Montana law, were supplied for an election in which President of the United States of America would be elected along with at least one ballot issue. Ballot forms included a primary election and general election. Party, precinct, split, and ballot issues were displayed on examination ballots. The office of the Secretary of State built a test desk by marking ballots and concurrently built a key for verification.

#### **Required Tests**

The following tests were performed:

- DS200 and DS850 Logic, Accuracy, and Overvote Test
- DS200 and DS850 Ballot Bending and Folding Test
- DS200 and DS850 Criteria of Construction Test
- DS200 and DS850 Marginal Mark Test
- ERM Accuracy Test

#### **Testing Procedure**

- Three sets of tabulation materials were used; a set of general election ballots and two sets of primary election ballots; Democrat and Republican. These ballots were marked by SOS staff at the examination site on the day prior to the test.
  - O All sets of materials were tabulated twice on a voting system with no exception for incorrect tabulation determined in the opinion of the examiners.
  - o The examiners tabulated all sets of materials and printed results.
  - o The SOS ballot keys were sealed in envelopes until all tabulator results were printed.
  - The ballot keys were distributed to the examiners to cross verify the results of the ERM and the tabulators to that of the expected results.

- Logic tests confirm that the voting system is capable of recognizing election ballots. Accuracy tests check the ability to correctly tabulate results. The overvote test identifies more votes than allowed.
- The ballot folding test determines the ability of the voting system to tabulate folded ballots. The marginal mark test demonstrates how voting systems may read ballot marks.
- The marginal mark test analyzed the ability of the scanner to distinguish different type of marks on the ballot. These types of marks included: checkmarks, arrows, lines, hesitation marks, different color pens, pencils, marks outside of the oval, and marks through many ovals.
- ERM Accuracy test determined the ability for the Election Reporting Manager to correctly import the results from the tabulators.
- Unity 3.4.1.0 was demonstrated by the vendor. Other than the ERM Accuracy test, no specific tests were performed on the software components, which have been federally tested and certified.

#### **System Test Results**

Not all examination tests apply to all voting systems. Only tests that pertain to a particular voting system were applied.

#### DS200 v. 1.7.0.0

#### Logic, Accuracy and Overvote Test

- The DS200 tabulated and correctly reported results from test decks of multiple ballot styles used in Montana, including two-page primary and two-page general election ballots, county splits, write-ins, and ballot issues.
- Overvotes were correctly identified with an audible and visual signal, which provides an opportunity for the elector to inspect the ballot before tabulation.

#### **Ballot Bending and Folding Test**

- Unfolded ballots had no issues with the DS200.
- Normally folded ballots ran through this machine as expected.
- Abnormally folded ballots ran through without issue.

#### **Ballot Marginal Mark Test**

- The DS200 tabulator read all properly marked ovals.
- Ovals marked with other marks were detected and sorted accordingly.

#### DS850 v. 2.9.0.0

#### Logic, Accuracy and Overvote Test

• The DS850 tabulated and correctly reported results from test decks of multiple ballot styles used in Montana including two page primary and two page general election ballots, county splits, write-ins, and ballot issues.

• Overvotes were correctly routed to an alternative tray to be manually viewed.

#### **Ballot Bending and Folding Test**

- Unfolded ballots ran through the DS850 without issue.
- Normally folded ballots ran through this machine as expected.
- Ballots with abnormal folding techniques were also run through. Only one created a jam. All examiners agreed that this ballot would have been sent to the board to have the ballot recreated before running it through the tabulator.

## Election Reporting Manager (ERM) v. 7.8.0.0 Accuracy Test

- USB thumb drives from the tabulators were imported into ERM and the results were printed.
- Results were verified against the tabulator printouts and the Secretary of State's ballot key.

#### **Recommendation and Impact**

ES&S Unity Suite 3.4.1.0 was recommended for approval of certification, after passing all testing criteria.

Approval of Unity Suite 3.4.1.0 presents no economic impact on the counties of the State of Montana.

Lisa Kimmet, Deputy for Elections and Government Services

#### Appendix A

• ES&S Application Documentation

#### Appendix B

Signed Vendor and Examiner Checklist

# Appendix A



### MONTANA SECRETARY OF STATE

### **Elections and Government Services Division**

**Application for Voting System or Component Certification** 

Name of Vendor  Election Systems & Software	Contact Person, Title Chris Bruscino, State Certification Manager
Address 11128 John Galt Boulevard	E-mail Address  Chris.bruscino@essvote.com
City, State, Postal Code Omaha, NE 68137	Telephone Number 402-938-1335
	Fax Number 402-970-1275

#### SYSTEM/COMPONENT INFORMATION

Statement that applicant is applying for examination pursuant to Administrative Rules of Montana:

Pursuant to the administrative Rules of Montana, Election Systems & Software is applying for the certification upgrade of Unity 3.4.0.0 to Unity v. 3.4.1.0. This release allows customers to upgrade software operating system from Windows XP to Windows 7.

Name and release level of system or component:

	Certification of Unity 3.4.1.0 Changes in RED	Current System Unity 3.4.0.0	Unity 3.4.1.0
	Election Data Manager (EDM)	7.8.1.0	7.8.2.0
Pre-Election Software	AutoMARK Information Management System (AIMS)	1.3.257	1.3.257
Ballot Definition	VAT Previewer	1.3.2907	1.3.2907
Ballot Layout Election Media	ES&S Image Manager (ESSIM)	7.7.1.0	7.7.2.0
	Hardware Programming Manager (HPM)	5.8.0.0	5.9.0.0
Post-Election Software	Election Reporting Manager (ERM)	7.8.0.0	7.9.0.0
Election Result Reporting	Election Result Reporting Audit Manager		7.5.2.0
Election Auditing	Log Monitor	1.0.0.0	1.1.0.0
	Model 100	5.4.4.5	5.4.4.5
	DS200	1.6.1.0	1.7.0.0
Tabulators	Model 650	2.2.2.0	2.2.2.0
The second secon	DS850	2.2.0.0	2.9.0.0
	ES&S AutoMARK (A100 HW 1.0)	1.3.2907	1.3.2907
Voter Assistance Terminal	ES&S AutoMARK (A200 HW 1.1)	1.3.2907	1.3.2907
1 emma	ES&S AutoMARK (A200 HW 1.3)	1.3.2907	1.3.2907

	Unity 3.4.1.0	Module Description					
	Election Data Manager (EDM)	Front-end module of Unity. EDM is a single-entry database where all election specific information such as precinct, office, and candidate information is entered. EDM's output is utilized by ESSIM and AIMS to complete the ballot definition process.					
Pre-Election Software Ballot Definition	AutoMARK Information Management System (AIMS)	Windows - based PC application program that assists election officials in preparing the flash memory card required by the AutoMark (VAT) for use in an election.					
Ballot Design Election Media	VAT Previewer	Utilized by AIMS and enables the user to preview AutoMARK screens and test audio files prior to burning election day media.					
	ES&S Image Manager (ESSIM)	Uses programmed files from EDM to design ballot images.					
	Hardware Programming Manager (HPM)	Enables the user to import, format, and create election definitions for ES&S' tabulators. The output is an election file that can be later imported into ERM after vote tabulation.					
	Election Reporting Manager (ERM)	Back-end module of Unity. Accumulates election results, formats/generates customized paper or electronic reports.					
Post-Election Software Election Results Reporting Election Auditing	Audit Manager	Creates users, provides password security, and real-time aud reports for EDM and ESSIM that tracks all user activities.					
	LogMonitor Service	A Windows Service that runs in the background of active ES&S Election Management software (EMS) applications to audit the proper functioning of the Windows Event Viewer. The LogMonitor application will close any open EMS applications if the system detects improper deactivation of the Windows Event Viewer.					
	Model 100	Precinct-based vote tabulator utilizing advanced Intelligent Mark Recognition (IMR) visible light scanning technology to scan ballots.					
	DS200	Precinct-based vote tabulator that scans both sides of the ballot simultaneously and saves ballot images to a USB memory device for later ballot viewing.					
Tabulators	Model 650	Central count based vote tabulator that includes a dedicated audit log printer and election results printer. The audit log printer prints user actions and system messages in real-time.					
	DS850	Central count based high-speed, optical scan tabulator that uses advanced cameras and imaging algorithms to simultaneously capture voter selections on the front and back of a ballot, evaluates the results, and sorts the ballots into bins.					
Voter Assistance Terminal	ES&S AutoMARK	Voter Assist Terminal designed to help voters mark their optical scanned ballots when they are visually impaired, physically disabled, or more comfortable reading or hearing instructions and choices in an alternative language. The AutoMark doesn't store, count, or tabulate votes.					

Name and version of major hardware, firmware, software and components:

Please see above for high level overview of the Unity 3.4.1.0 voting system. Below is a continuance of the above table with additional details on ES&S' hardware versions.

	Firmware Version	Hardware Level	Operating System
AutoMARK (A100)	1.3.2907	1.0	5.0.1400
AutoMARK (A200)	1.3.2907	1.1	5.0.1400
AutoMARK (A200)	1.3.2907	1.3	5.00.19
AutoMARK (A200)	1.3.2907	1.3	5.00.19
Model 100	5.4.4.5	1.3	
DS200	1.6.1.0	1.2	
Model 650 (Visible Green/Left Hand Response)	2.2.2.0	1.2	
Model 650 (Visible Red/Left Hand Response)	2.2.2.0	1.2	
DS850	2.2.0.0	1.0	
Metal Ballot Box		1.0,1.1,1.2	
DS200 Plastic Ballot Box		1.2,1.3	

	ion (select one): f a new system or component f modification to certified sy			ts for type of application:				
Renewal of a previously certified system or component  Hardware X Firmware X Software								
				The state of the s				
Date and time of	requested examination: June 17, 2015		Place of examination: (TBD), Helena, Montana					
Statement that th	e applicant will pay reasona	ble costs of examination	on (MCA 13-17-102(2)):					
	Election Systems & S	oftware will pay reas	onable costs of examination of	Unity 3.4.1.0				
<b>F</b>			· · · · · · · · · · · · · · · · · · ·					
References for ea	ach state where this <u>exact</u> sy	stem or component is	currently certified for use:					
State	Date Approved	Length of Use	Contact Person	Contact Information				
Idaho	06/02/14		Jim Mairs	208-332-2834				
Wyoming	04/01/15		Kai Schon 307-777-3416					
Washington	06/27/14		Stuart Holmes 360-725-5794					
If state approval/certification has ever been revoked on exact system or component (does not necessarily disqualify application):  Please attach documentation regarding steps taken to resolve issues, if any.  State Date Approved Length of Use Contact Person Contact Information								
N/A	N/A	N/A	N/A	N/A				
Does the applican	nt own all rights to this equi	pment?	X YES	NO (please explain):				
	system manufactured or assist part and manufacturer con		mpany? YES	X NO				

		(Corporation	☐ Partnership	☐ Individual
I	f a Corporation, state of incorporation		X YES	NO
	Authorized to do business in		YES	X NO
	Maintain an office in Monta	ına	X YES	NO
	Independently owned  If not independent	ly owned name and ad	dress of parent compan	
	II not mappingent	iy o whoa, name and an	0. 000 01 Part 11 1	•
This anni	ication must include the following	when applicable: Pl	ease check the box if m	aterial is included with the application or
indicate N	/A if not applicable. If not included	with this application,	material must be suppli	ied before testing is scheduled.
	Completed Application Refer to Folder 1			
	Documentation indicating federal q Refer to Folder 2			
	Documentation from all independent Refer to Folder 3			
	Documentation from listed jurisdic N/A			
X 5.	Documentation indicating executable X Document granting Montana Se	ele image, source code, ecretary of State unrestr	etc. are escrowed with icted access to escrow	approved ITA materials
X 6.	Refer to Folder 4  Description of how the system or c  Refer to VSTL Reports in Folder		commonly accepted ind	ustry standards
X 7.	Engineering drawings, schematics Refer to Folder 5		g software and data file	erelationships
X 8.	Photographs of the system and fund	ctional description of so	oftware and components	S
<b>X</b> 9.	Refer to Folder 6 Equipment durability statement and	d reliability estimate (m	nust meet requirements	of <u>ARM 44.3.1703</u> )
<b>X</b> 10.	Refer to Folder 7 Environmental requirements for s Refer to Folder 7	torage, transportation a	nd operation	
<b>X</b> 11.	Security measures recommended for Refer to Folder 8	or securing the voting s	ystem before, during, a	nd after an election, including recounts
<b>X</b> 12.	Examples of how the system or con Refer to Folder 8	mponent may be protec	ted from tampering for	a fraudulent purpose
X 13.	Copies of contracts and maintenand Refer to Folder 9	ce agreements used in o	connection with the syst	em or component
X 14.	Type of maintenance agreements a	nd levels offered by ve	ndor and maintenance p	providers
	X List of current maintenance rat Refer to Folder 9	es and schedule of anti-	cipated rate increases	
	Applicable user, operator, mainten Refer to Folder 10			
	Troubleshooting guides and descrip Refer to Folder 10\System Opera	tions Procedures		
X 17.	List and description of training cou Refer to Folder 11	rses provided and avai	lable (including both or	n-and off-site training)
X 18.	Copies of materials useful for instr Refer to Folder 10\System Opera	uction or information untions Procedures	seful to electors at the	pollš
	List of specific ballot styles and re- Refer to Folder 10\System Oper	commended ballot mar ations Procedures		
	Upgrade plan for existing custome To be submitted prior to examina	rs – identify all custom ation by Customer Ser	vice Department	
X 21.	Procedure for notifying State abou Refer to Folder 12	t necessary and availab	le system changes (EC	O, ECN, etc.)

#### **AFFIRMATION**

In making application for the certification of the system or component listed; I affirm under the penalty for perjury that to the best of my knowledge and belief all the information contained in this application is true. I agree to reimburse the State of Montana for reasonable costs incurred by the Montana Election and Government Services Division in evaluating the voting system.

Signature Wan ABrusani

State Certification Manager

Date 4/17/10

Deliver Application To:
Montana Secretary of State
Elections and Government Services Division
PO Box 202801
Helena, Montana 59620-2801

Direct Questions To:
Office of the Montana Secretary of State
Lisa Kimmet, Elections Deputy
Telephone: (406) 444-5376
Email: lkimmet@mt.gov

#### Applicable Montana Statue and Rules

Montana Code Annotated
Title 13, Chapter 17
http://data.opi.mt.gov/bills/mca\_toc/index.htm

Administrative Rules of Montana Title 44, Chapter, 3, Subchapter 17 http://www.mtrules.org/

No application may be submitted to the Secretary of State later than 90 days prior to the date of the election at which the machines are proposed to be used.

ARM 44.3.1701(7)

http://www.mtrules.org/gateway/ruleno.asp?RN=44%2E3%2E1701

Voting systems may not be used in an election unless approved by the secretary of state 60 days or more prior to the election at which they will be used.

MCA 13-17-101(3)

http://data.opi.mt.gov/bills/mca/13/17/13-17-101.htm

The secretary of state shall: within 30 days after examining the voting system, file a report of the examination in the secretary of state's office.

MCA 13-17-101(2)(b)

http://data.opi.mt.gov/bills/mca/13/17/13-17-101.htm

Updated: December 2011

# Appendix B

State of Montana Certification Event Checklist - Pursuant to Montana Code Annotated and Administrative Rule					
Vendor Checklist  The applicant shall guarantee to provide training and assistance to election officials included in each contract for purchase of a machine or device.		NO	Not Applicable	Comments	
	Þ				
Allows auditors to access and monitor any software program while it is running on the system to determine whether the software is running properly	Þ	0	0		
At least one fully operative system unit or set conforming to the description of the same contained in the application	Ą	0	0		
At least one copy of any brochures, pamphlets, and descriptive or sales material of any kind intended for use in promoting the same for use of such system in Montana	×	0			
Samples of any training aids supplied by the applicant for the use of election officials	×	a	0		
Where applicable sample ballots suitable for use in the system substantially in the form required by Montana law for a primary and general election in a year in which a president of the United States of America is to be elected. Such ballots for the general election sample shall also contain a ballot issue to be voted upon.		0	0		
Copies of any other material required by law to be displayed at the polls, or useful for the instruction or information of electors at the polls	×	0	0		
If not contained in other materials, data on the extent of use and length of use of the system being examined in other jurisdictions	×	0	0		

Vendor Checklist (Page 2)	YES	ON	Not Applicable	Comments
Voting machines or devices shall be constructed of materials sufficiently durable to withstand normal wear and tear due to usage, storage and transportation. It is the intent of this rule that the system shall have a useful life of ten years or more without major mechanical or electronic failure due solely to normal use, storage and transportation. Applicant shall submit data pertinent to this rule, if available.	×		0	
Such system shall be fully guaranteed as to parts and workmanship for a period of not less than two years from date of purchase, and the manufacturer shall be prepared to provide maintenance and repair service for such system at a rate to be agreed upon by the manufacturer, dealer or agent of either and the purchasing entity.	×	0	0	
Each system or each component of any system shall remain operative and unimpaired in efficiency and accuracy in the physical and electrical environment normally found in polling places and other places used for election purposes, including places to which ballots are taken for purposes of tabulation.	×			
The system shall be so constructed as to operate in atmospheric temperatures ranging from 65 to 90 degrees Fahrenheit	x			
The system shall be so constructed as to operate without being affected by variations in the voltage or amperage of the power supply normally found in places where it is to be used	)Á	0		
Any system utilizing photoelectric or photosensitive components shall be so constructed that it will operate in the presence of light intensity on the order of that caused by the use of flashbulbs or other lighting, whether intermittent or continuous, used for photographic purposes		0	×	
The manufacturer or his agent shall demonstrate the extent to which bending, folding or otherwise abusing a ballot or ballot card is possible without causing said ballot or ballot card to be unusable in the tabulating equipment. If more than one per cent of the ballots marked or pierced at the site of the examination shall be rejected by the tabulating equipment for such cause, such rejection shall be deemed a material cause for rejection of the system.	×			
If the system being examined uses a paper ballot which is to be marked with ink or other visible substance, the manufacturer or his agent shall demonstrate the extent to which a mark may fail to cover the voting space, or fail to be in ideal position before the vote shall fail to be counted by the tabulating equipment	Á	0	۵	

Signatures

On Jan

summary of the ballot overvote conditions.

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	YES	ON	Not Applicable	Comments
Where applicable no device shall be approved if the act of voting by an elector does not produce a visible effect upon the ballot by application of a visible substance to the ballot.		0	ø	
It shall be determined, in the Judgment of the examiners whether or not the system complies with all other applicable requirements of the election laws.	ø	0	0	
The machine shall be constructed so that it cannot be tampered with for a fraudulent purpose.	¥	0	0	
It shall be determined that if levers or buttons of any description are used as the method of casting a ballot that such levers or buttons will produce a positive vote regardless if they are fully depressed or not.	0	0	ø	
Where applicable a set of programmed ballots having a known count for each office or ballot issue listed thereon, which count shall be declared before any test tabulation of said ballots is made.	ø	0	0	
A set of sample ballots, not less than 25 nor more than 100 in number, shall be marked or pierced at the site of the examination by a person present other than the applicant or his agent. Such set shall be tabulated no less than two nor more than five times. The failure of any subsequent tabulation to agree completely with the initial tabulation shall be deemed a material cause for rejection of the system.	ø	0	_	
By tabulation of the preprogrammed materials supplied under ARM 44.3.1702(1)(e), it shall be determined whether the tabulating apparatus will count accurately on no less than two nor more than five tabulations of the materials so supplied. Any difference in count on any tabulation of preprogrammed material shall be deemed a material cause for rejection of the system.	ø	0	0	
At least two of the ballots marked or pierced under ARM 44.3.1703(1)(b) shall contain a vote for one office in excess of the number of votes which an elector would be entitled to cast for such office. Failure of the machine to reject such ballot shall be deemed a material cause for rejection of the system.	ø	0	0	
Sknatures  Anne Woldberg	•			

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The attached documents were completed and signed on June 17, 2015 by the following parties:

#### **Vendor Checklist:**

Chris Bruscino Toby Dingbaum

#### **Examiner Checklist:**

Janice Goldsby
Paulette DeHart
Rebecca Connors
Vickie Zeier
Bret Rutherford
Monica Eisenzimer

Casey R. Hayes

**Elections Specialist** 

Office of the Montana Secretary of State